KOVTUN, G.P. [Kovtun, H.P.]; KRUGLYKH, A.A. [Kruhlykh, A.A.];
PAVLOV, V.S.

Determining the vapor pressure in metals from the vaporization
rate. Ukr. fiz. zhur. 6 no.3:386-389 My-Je '61.
(MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN USSR, g. Khar'kov.
(Vapor pressure)

S/185/61/006/003/004/010
D208/D302

AUTHORS:        Amonenko, V.M., Kruglykh, A.A. and Tykhins'kyy, G.P.

TITLE:          On the vacuum refining of chromium

PERIODICAL:     Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 3, 1961,
                390-393

TEXT:    An attempt was made to refine chromium from an aluminum ad-
mixture by the distillation method.  The results were not satisfac-
tory.  The admixture contained 0.6% Al.  The distillation took place
in a vacuum of $10^{-6}$mm Hg and at a temperature of $1400^{\circ}$C.  It could
be assumed that if the vapors precipitate on a surface which is
heated to a temperature at which the difference between the vapor
pressure of chromium and of aluminum is considerable, the two metals
could be separated.  At a condensation temperature of 900 - $1100^{\circ}$C
there was such a difference between vapor pressures (2 orders of
magnitude).  Yet no appreciable refining was observed.  In order to
ascertain the reasons for this, alumino-thermic chromium, containing
0.6% Al and 0.2% aluminum-oxide was used, as well as melts of pure

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On the vacuum refining...

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D208/D302

electrolythic chromium with 0.5% to 5.4% Al. The obtained specimens were distilled and condensed. In order to exclude impurities due to the oxide, the vaporization took place in crucibles made of tantalum wool. The change in aluminum contents of the precipitate as a function of temperature of the condensation surface is shown graphically. Two reasons were suggested for the inadequate results: The formation of a solid solution on condensation, and the formation of suboxides at the high vacuum-temperatures. X-ray investigations supported the first explanation. To verify the second reason, a melt $Cr-Al-Al_2-O_3$ with 5.4% Al and 5.7% $Al_2O_3$ was refined. A volatile suboxide was formed which decomposed on condensation into Al and $Al_2O_3$. The authors conclude that the vaporization of the aluminum admixture takes place in the atomic state. On condensation upon a hot surface (above 700°C), a solid solution is formed. During the vaporization of chromium, reactions take place in the crucible which lead to the formation of aluminum suboxides. The free Al which results from the decomposition of the suboxide forms a solid solution with the chromium. The formation of a solid solution at

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On the vacuum refining...

S/185/61/006/003/004/010
D208/D302

condensation temperature and the transfer of Al and $Al_2O_3$ as suboxides does not permit refining chromium from aluminum by the method of vacuum distillation. There are 2 figures and 7 references: 1 Soviet-bloc and 6 non-Soviet-bloc. The references to the English language publications read as follows: L. Limsden, Disc. of Far. Soc. 4, 60, 1949; A.I. Bradley, J. Inst. of Metals, 40, 319, 1937; M. Hoch, H.L. Jonston. J. Amer. Chem. Soc., 76, 2560, 1954; C. Norman Cochram. J. Amer. Chem. Soc., 77, 2190, 1955.

ASSOCIATION:   Fizyko-tekhnichnyy instytut AN   USSR (Physico-
               technical Institute AS UkrSSR, Khar'kov

SUBMITTED:     July 1, 1960

Card 3/3

S/185/61/006/003/005/010
D208/D302

18 7500    1555, 1418, 1454

AUTHORS:    Kruglykh, A.A., Pavlov, V.S. and Tykhins'kyy, G.P.

TITLE:    Grain growth in chromium

PERIODICAL:    Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 3, 1961,
394-397

TEXT:    The study of grain growth in chromium is of practical inter-
est in connection with the use of chromium as a heat-resistant mat-
erial. In literature there are data on the recrystallization of
chromium of various degrees of purity, but there are none concerning
grain growth, V.I. Arkharov, F.I. Shangarev (Ref. 1: FMM, 6, no. 1,
82, 1958); S.T.M. Johnstone (Ref. 2: Nature, 181, 806, 1957). In
the present study, grain growth was investigated under isothermal
annealing for the purpose of determining the rate of growth and the
activation energy. Chromium was used with an admixture as specified
in the table. The specimens were made of plates which were obtain-
ed by condensation in a high vacuum ($1.10^{-6}$ mm Hg), on a tantalum
surface at 500°C. The plates were rolled at room temperature so as

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23292

S/185/61/006/003/005/010
D208/D302

Grain growth in chromium

to thin them by 30%. Then they were annealed for 10 hours in a
vacuum, at 900°C. Thus a near-equilibrium structure was obtained.
The author stresses the fact that after the treatment the width of
the dendrites was reduced from 50 to 30 $\mu$ (microns). After anneal-
ing at 900°C, the plates were again rolled at room temperature, and
the growth was investigated (by metallographic methods) after anneal-
ing at temperatures of 900, 950, 1000, 1050 and 1100°C. The results
show that the thermal fluctuations are greater at high temperatures
than at low, and they lead to centers of recrystallization which are
more numerous at 1100°C than at 1060°C. This explains the fact that
the average size of the grains is smaller at 1100°C than at 1050°C.
The linear dependence of $D^2$ on time shows that grain growth in
chromium follows the statistical law

$$D^2 - D_0^2 = Kt \qquad (1)$$

where $K = K_0 e^{-\frac{Q}{kT}}$ (2); $D_0$ - diameter of grain at $t = 0$,

K - rate of growth, Q - activation energy which is numerically equal
or nearly equal to the activation energy of self-diffusion at the
boundaries of the grains. $K_0$ equals 1 $cm^2/sec$ in the investigated
temperature range. $D_0^2$ was obtained by extrapolation. The rate of

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Grain growth in chromium

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D208/D302

growth at various temperatures was calculated by Eq (1). The temperature dependence of K in coordinates $\lg K - \frac{1}{T}$ was linear. The obtained value of the energy of activation was $53 \pm 5$ kcal/g.atom, which is in agreement with B.S. Bokshtein, S.T. Kishkin (Ref. 5: Zav. Lab., 23, no. 3, 316, 1957) and Gondolf Pakston (Ref. 6: Arch. Eisenhüttenwesen, 30, no. 1, 55, 1959). The equations were taken from D. Burke, U. Tarnball (Ref. 3: UFM, 1, 368, 1956) and P. Feltham, (Ref. 4: Acta.Met., 6, .no. 8, 539, 1958). There are 4 figures, 1 table and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: S.T.M. Johnstone, Nature, 180, 806, 1957; P. Feltham, Acta Met., 6, No. 8, 539, 1958.

ASSOCIATION:    Fizyko-tekhnichnyy instytut AN USSR (Physicotechnical Institute, AS UkrSSR) Khar'kov

SUBMITTED:    July 1, 1960

Card 3/4

21371

5.2200    1043, 1087, 1273

S/126/61/011/004/021/023
E021/E435

AUTHORS:    Amonenko, V.M., Kruglykh, A.A. and Papirov. I.I.

TITLE:    Preparation of Zinc of High Purity and a Method of its Control

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.4, pp.633-635

TEXT:    The method of purification used was vacuum distillation and condensation of the vapours on a surface with a temperature gradient (Ref.6). The apparatus is shown in the figure: 1 coupling, 2 quartz tube, 3 condenser, 4 heating sections, 5 baffles, 6 crucible and 7 thermocouple. Zinc of 99.98% purity was used as the initial material. One kg was placed in a crucible and 70 to 95% of it vapourized. The purest zinc was always obtained in the middle zone of the condenser. When a shorter condenser was used, the degree of purification decreased. The purest zinc was obtained by vapourizing at 460°C when a purity of 99.99997% was obtained. 40% of the original charge could be obtained with this purity. Repeated distillation did not give a further improvement in purity. The control of the purity was carried out by the method of measuring the residual resistance, Card 1/3

Preparation of Zinc ...

S/126/61/011/004/021/023
E021/E435

using a low-ohmic condenser and a high-sensitivity galvanometer
(B.N.Aleksandrov, I.G.D'yakov and one of the authors, I.I.Papirov,
carried out these measurements in the Kriogennaya laboratoriya
(Cryogenic Laboratory) of the Institute .  The ratio of the
resistance at 4.2°K to the resistance at room temperature of the
obtained sample was compared with the same ratio for zinc of known
purity.   Thus an estimate of the total impurity in the zinc was
obtained.   Acknowledgments are expressed to B.G.Lazarev for his
advice.   There are 1 figure and 11 references: 7 Soviet and
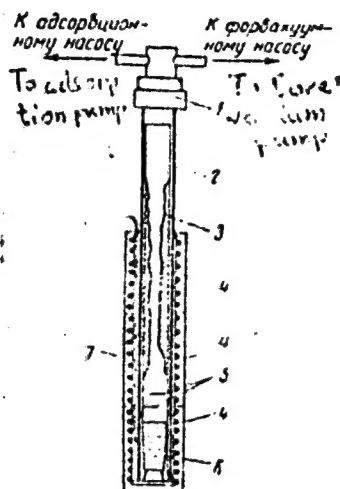4 non-Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
             (Physicotechnical Institute AS UkrSSR)

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Preparation of Zinc ...

S/126/61/011/004/021/023
E021/E435

Figure.



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KRUGLYKH, H.H.

4

IVANOV, V.YE., KRUGLYKH, A.A., PAVLOV, V.S., KOVTUN, G.P. AND AMONENKO,V.M.

"Measurment of the  vapor pressure of uranium containing compounds."

Report  presented at the  IAEA Symposium on the Thermodynamics of Nuclear
Materials.
Vienna, Austria      ·    21-26  May 1962

S/185/62/007/003/014/015
D299/D301

AUTHORS:         Kovtun, H.P., Kruhlykh, A.A. and Pavlov, V.S.

TITLE:           On determining the vapor pressure of metals by the
                 rate of evaporation from a cylindrical crucible

PERIODICAL:      Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 3, 1962,
                 336 - 337

TEXT:            The dependence of the rate of evaporation on the ratio
of the length $\nu$ to the diameter d of the crucible, was investigated for
silver ($\nu$ = 0.15) and chromium ($\nu$ = 0.5); $\lambda$ is the coefficient of eva-
poration. Molybdenum crucibles were used, with different $l/d$. From a
formula, obtained by the authors in an earlier investigation, it follows
that if the ratio $\nu/d$ is sufficiently large, the vapor pressure can be
determined by the formula

$$P = \frac{G}{S \cdot K}\sqrt{\frac{2\pi RT}{M}}.$$

(2)

Card 1/3

On determining the vapor pressure ...

S/185/62/007/003/014/015
D299/D301

where G is the rate of evaporation, S -- the evaporation surface and K -- Clausing's coefficient. A figure shows the dependence of the rate of evaporation on $l/d$. It was found that, from a certain value of $l/d$ on, the rate of evaporation changes only insignificantly at constant temperature. There exists, for various metals, a certain ratio $l/d$, for which the vapor pressure is expressed by formula (2). For chromium, this value is $l/d \geqslant 8.5$. In order to verify this assumption, the vapor pressure of chromium was measured at temperatures of 1200 - 1350°C. The evaporation took place simulataneously from 2 cylindrical crucibles, with $l/d = 8.5$ and $l/d = 4.5$, respectively. The rate of evaporation was found to be practically equal in both the long- and the short crucible. A figure shows the temperature dependence of the vapor pressure, calculated by the rate of evaporation from the crucibles with $l/d = 8.5$. By processing the results by the method of least squares, the following equation for the vapor pressure of chromium in the temperature range of 1200-1350°C is obtained: $1gP = 10.890 - 20830/T$, which is in good agreement with the results of other investigators. There are 2 figures, 1 table and 5 refer-

Card 2/3

On determining the vapor pressure ...

S/185/62/007/003/014/015
D229/D301

ences: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English language publication reads as follows: M.G. Rossman, J. Jarwood, J.Appl. Phys., 5, 7, 1954.

ASSOCIATION:     Fizyko-tekhnichnyy instytut AN URSR (Physicotechnical Institute of the AS UkrRSR), Kharkiv

SUBMITTED:     December 1, 1961

Card 3/3

S/185/62/007/004/014/018
D407/D301

18.1150

AUTHORS:      Kovtun, R. P., Kruhlykh, A. A., and Pavlov, V. S.

TITLE:        Vapor pressure and evaporation coefficient of nickel

PERIODICAL:   Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 4, 1962, 436-437

TEXT:     The vapor pressure and the coefficient of evaporation of nickel were determined by the method of evaporation from a cylindrical crucible and by Knudsen's effusion method. The first method was described in an earlier work by the authors. Thereby, the vapor pressure was calculated by the formula

$$P = \frac{G}{S}\left[\frac{1}{K} - 1 + \frac{1}{\alpha}\right] \cdot \sqrt{\frac{2\pi RT}{M}} \; ,$$

Card 1/3

Vapor pressure and...          .

S/185/62/007/004/014/018
D407/D301

where  G  is the rate of evaporation,  S--the evaporation sur-
face,  K--Clausing's coefficient, and  $\alpha$ --the coefficient of
evaporation.  No appreciable changes in the rate of evaporation
were observed during the evaporation of nickel from cylindrical
crucibles with different  K.  Therefore, the vapor pressure of
nickel was measured, in the temperature range 1190 – 1355°C, on
the assumption that  $\alpha$ = 1.  The experimental data, processed
by the method of least squares, yielded the following formula
for the vapor pressure of nickel:

$$1gP = 10.562 - \frac{22360}{T} \quad .$$

This formula is in good agreement with the results of other
investigators.  In order to verify the above results, Knudsen's
method was used.  Thereby, the nickel was evaporated from effu-
sion chambers with two different sizes of aperture.  In this
case, too, no appreciable changes in the rate of evaporation were

Card 2/3

Vapor pressure and...

S/185/62/007/004/014/018
D407/D301

observed. The results obtained by the first and second method were in good agreement. This led to the conclusion that the coefficient of evaporation of nickel does not differ appreciably from unity. There are 1 figure and 9 references: 4 Soviet-bloc and 5 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: H. L. Johnston, A. L. Marshal, J. Amer. Chem. Soc., 62, 1382, 1940; G. Bryce, J. Chem. Soc., 1517, 1936; I. P. Hirth and G. M. Pound, J. Chem. Phys., 26, 1216, 1957; I. P. Hirth and G. M. Pound, J. Phys. Chem., 64, 619, 1960.

ASSOCIATION:   Fizyko-tekhnichnyy instytut AN URSR (Physico-technical Institute of the AS UkrRSR), Kharkiv

SUBMITTED:     September 23, 1961

Card 3/3

AMONENKO, V.M.; KOVTUN, G.P.; KRUGLYKH, A.A.; PAVLOV, V.S.

Absorption of air by aluminum oxide. Ukr. khim. zhur. 29
no.10:1109-1110  '63.                         (MIRA 17:1)

1. Khar'kovskiy fiziko-tekhnicheskiy institut AN UkrSSR.

ACCESSION NR:  AP4029844                                  S/0279/64/000/002/0177/0179

AUTHOR:  Kovtun, G. P. (Khar'kov); Kruglykh, A. A. (Khar'kov); Pavlov, V. S. (Khar'kov)

TITLE:  Vapor pressure of solid beryllium

SOURCE:  AN SSSR Izv. Metallurgiya i gornoye delo, no. 2, 1964, 177-179

TOPIC TAGS:  vapor pressure, beryllium, evaporation, Langmuir method, Knudsen method, sublimation

ABSTRACT:  Since the purity and technology of beryllium have been improved, it has become necessary to know the temperature dependence of vapor pressure for the purest types.  The authors have determined the vapor pressure of beryllium the over-all purity of which considered non-metallic impurities at not less than 99.95%.  The Fe, Si, Al, Cr, and Ni impurities did not exceed 0.001% for each component.  The calculation for the vapor pressure was conducted by the following formula (using Knudsen's method)

$$P = \frac{G}{K}\sqrt{\frac{2\pi RT}{M}} \qquad (1)$$

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ACCESSION NR: AP4029844

in Langmuir's method

$$P = \frac{G}{\alpha}\sqrt{\frac{2\pi RT}{M}} \qquad\qquad (2)$$

where P is the vapor pressure, G is the vaporization rate; K is Clauzing's coefficient α is the vaporization coefficient. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 13Jul63       DATE ACQ: 30Apr64            ENCL: 00

SUB CODE: ML             NO REF SOV: 000              OTHER: 003

Card 2/2

ACCESSION NR:   AP4040990                              S/0279/64/000/003/0158/0160

AUTHOR: Amonenko, V.M. (Kharkov); Krugly*kh, A.A. (Kharkov); Pavlov, V.S. (Kharkov); Tikhinskiy, O.F. (Kharkov)

TITLE: Evaporation rate of components in thermal dissociation of yttrium and lanthanum beryllides

TOPIC TAGS: yttrium, yttrium beryllide, lanthanum, lanthanum beryllide, beryllide dissociation, beryllium vapor pressure, thermal dissociation

ABSTRACT: The evaporation rates of components of yttrium and lanthanum beryllides during thermal dissociation of yttrium beryllide at 1040—1290C and lanthanum beryllide at 1080—1270C have been determined. $YBe_{13}$ and $LaBe_{13}$ beryllides were prepared by sintering 99.95%-pure beryllium powder with powders of 99.8%-pure yttrium or 99.4%-pure lanthanum. From the analysis of x-ray diffraction patterns, chemical analysis of the condensate, and calculated values of the vapor pressure of yttrium, beryllium, and lanthanum, it is concluded that both beryllides

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ACCESSION NR: AP4040990

dissociate at temperatures above 1050C. Orig. art. has: 1 figure
and 2 tables.

ASSOCIATION: none

SUBMITTED: 22Jul64      ATD PRESS: 3041      ENCL: 00

SUB CODE: MM      NO REF SOV: 006      OTHER: 005

Card 2/2

ACCESSION NR: AP4033131                    S/0120/64/000/002/0130/0132

AUTHOR: Kovtun, G. P.; Krugly*kh, A. A.; Pavlov, V. S.

TITLE: Electron-beam gun for determining rate of evaporation of low-volatility materials

SOURCE: Pribory* i tekhnika eksperimenta, no. 2, 1964, 130-132

TOPIC TAGS: electron beam gun, low volatility, low volatility material, vaporization rate, evaporation rate

ABSTRACT: Unlike J. Pierce's ideal system (J. Appl. Phys., 1940, 11, 548), the gun described in the present article has both cathode and anode in the form of two semiplanes at an angle of $135^\circ$. Three guns (see Enclosure 1) have a common anode 1 and separate cathodes 2 with moly lead-ins 3. Slits 4 ($55 \times 5$ mm) serve to pass the electron beams, while slit 5 ($40 \times 6$ mm) is intended for viewing. Channels 6 pass cooling water. Max electron current, 1-1.5 amp

Card  1/2

ACCESSION NR: AP4033131

at 8-10 kv.  Specimens of up to 8 x 30 mm are acceptable.  Tungsten and graphite specimens were heated up to 3,000C.  The gun is recommended for studying the evaporation rate, vapor pressure, recrystallization, cyclic thermal treatment, and other high-temperature problems.  Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-Technical Institute, AN UkrSSR)

SUBMITTED: 30May63          DATE ACQ: 11May64          ENCL: 01

SUB CODE: PH                NO REF SOV: 000             OTHER: 003

Card    2/
  2/6

ACCESSION NR: AP4017401                    s/0185/64/009/002/0214/0215

AUTHOR: Krugly*kh, A. A.; Pavlov, V. S.; Ty*khins'ky*y, O. P.

TITLE: Vapor pressure of solid yttrium

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 2, 1964, 214-215

TOPIC TAGS: yttrium, yttrium vapor pressure, yttrium vapor, clausing
coefficient, evaporation rate, yttrium sublimation, high temperature
evaporation

ABSTRACT: Values for the vapor pressure of yttrium obtained by Nesmeyanov
et. al. on two different occasions (Vestnik MGU, No. 2, 40, 1962; Izv. A. N.
USSR, Metallurgiya i Toplivo, 5, 117, 1962) differed by an order of magnitude.
Ackerman and Rauch obtained yet another set of values mass-spectrometrically
[J. Chem. Phys. 36 (2), 448, 1962] . The authors measured the vapor pressure
of yttrium over the solid phase between 1100 and 1480C by observing vaporization
rates at each value of temperature in a vacuum. A cylindrical tantalum

Card   1/2

ACCESSION NR: AP4017401

crucible held the material, and temperatures were measured with an optical pyrometer. The results coincided with those of Ackerman and Rauch, and are expressed by the relation:

$$\log P_{mm} = -\frac{18500}{T} + 7.580.$$

"The authors thank M.S. Rudenko and M. M. Matyushenko for their discussion of the results." Orig. art. has one table, one graph and one formula.

ASSOCIATION: Fizy*ko-Tekhnichny*y Insty*tut AN URSR, Kharkov (Physico-Technical Institute, AN URSR)

SUBMITTED: 25Jul63          DATE ACQ: 19Mar64          ENCL: 00

SUB CODE: CH, EL          NO REF SOV: 003          OTHER: 001

Card 2/2

ABSTRACT  The pressure of gadolinium and dysprosium vapor was determined
at temperature intervals of 1130 ..... the effusion method, by the difference ..... tantalum effusion

Card 3 3

L 9608-66    EWT(m)/EPF(n)-2/EWP(t)/EWP(b)     IJP(c)    JD/WW/JW/JG
ACCESSION NR: AP5024132                         UR/0135/65/010/009/1029/1032

AUTHOR: Kruhlyakh, A.A. (Kruglykh, A.A.); Pavlov, V.S.

TITLE: Pressure of saturated vapor of liquid cerium

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 9, 1965, 1029-1032

TOPIC TAGS: vapor pressure, cerium

ABSTRACT: The pressure of cerium vapor was determined in the temperature range
of 1295-1570°C. Cerium, 99.7% pure, purified by the zonal recrystallization
method was used for the measurements, which were carried out by two independent
methods: by effusion, and the rate of evaporation from a cylindrical crucible.
The change in the weight of the container with the substance was recorded con-
tinuously. The results show good agreement and are described by the equation

$$\log P_{mm} = 8.81 - \frac{19020}{T}$$

The heat of evaporation of cerium was determined as 87.0 k cal/mol; the boiling
point, as 2930°C.

Card 1/2

L 9608-66
ACCESSION NR:  AP5024132                                              0

ASSOCIATION:  none

SUBMITTED:  30Sep65                 ENCL:  00              SUB CODE:  07, 20

NO REF SOV:  002                    OTHER:  005

Card  2/2

L 27468-66    EWT(m)/EWA(d)/EWP(t)    IJP(c)    JD

ACC NR: AP6007844                    SOURCE CODE: UR/0120/66/000/001/0211/0212

AUTHORS: Kovtun, G. P.; Kruglykh, A. A.; Pavlov, V. S.

ORG: Physicotechnical Institute AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut AN UkrSSR)

TITLE: Apparatus for zone refining of refractory metals

TOPIC TAGS: refractory metal, electron beam melting, metal zone refining, molybdenum, metal ceramic material

ABSTRACT: The authors describe an electron-beam instrument with electrostatic beam focusing, intended for zone refining of refractory metals. The device employs three plane-parallel beams of electrons with radial cathodes and focusing electrodes (Fig. 1). The use of plane cathodes instead of annular cathodes eliminates contamination of the cathodes, prevents electric discharges, and prevents contamination of the refined sample. The focusing system for each electron beam consists of plane anode and cathode electrodes bent at 135°. Tests with metal-ceramic molybdenum rods up to 10 mm in diameter have shown that the rods could

Card    1/2                    UDC:    58.553.6

L 27468-66

ACC NR:    AP6007844

Fig. 1.   Operating principle of electron-beam
gun.    1 -- Sample, 2 -- melting zone, 3 --
focusing anode, 4 -- focusing cathode,  5 --
electron source.
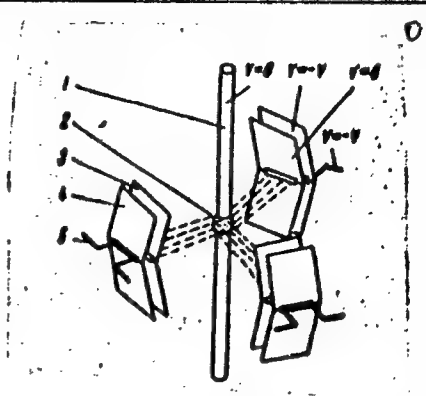
be subjected to zone refining without preliminary heating and, in spite
of the considerable gas release, melting began without prior outgassing.
Orig. art. has:  2 figures

SUB CODE: 13, 11/      SUBM DATE: 24Jan65/  ORIG REF: 002/  OTH REF: 003

Card        2/2    BLG

L 32607-66    EWT(m)/EWP(t)/ETI    IJP(c)    JD/JG/GD

ACC NR: AT6010591

SOURCE CODE:  UR/0000/65/000/000/0163/0168

AUTHOR: Amonenko, V. M.; Kruglykh, A. A.; Pavlov, V. S.; D'yakov, L. G.;
Balenko, E. P.

*33*

*b+1*

ORG:  Physicotechnical Institute, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE:  On the possibility of purifying cerium by zone recrystallization

SOURCE:  AN UkrSSR. Fazovyye prevrashcheniya v metallakh i splavakh (Phase transformations in metals and alloys). Kiev, Naukova dumka, 1965, 163–168

TOPIC TAGS:  metal zone refining, cerium, recrystallization, *zone melting*

ABSTRACT:  The object of the study was to determine the distribution of impurities (lanthanides, silicon, magnesium, iron, and copper) in cerium during zone melting of the latter.  The process was carried out at $3 \times 10^{-6}$ mm Hg on cerium which had first been re-melted for one hour at 1423K at the same pressure.  The molten zone was produced by electron bombardment, and its travel rate was varied from 5 to 0.15 mm/min.  The refining process turned out to be most efficient at a rate of 0.5 mm/min.  However, zone melting is not effective in removing other rare earth metals from cerium.  Iron, copper, and silicon impurities are driven to the end of the ingot and have a distribution coefficient $K < 1$.  After ten passes, the iron content decreases by a factor of 5, and the silicon and copper contents decrease by a factor of 10.  Magnesium is removed chiefly by vaporization as the zone moves

Card  1/2

L 32607-66

ACC NR: AT6010591

along the sample. Orig. art. has: 3 figures and 2 tables.

SUB CODE: II / SUBM DATE: 07Oct64 / ORIG REF: 003 / OTH REF: 002

Card 2/2

L 32066-66    EWT(m)/EWP(t)/ETI    IJP(c)    JD/JG

ACC NR: AP6013334        SOURCE CODE: UR/0363/66/002/004/0578/0581

AUTHOR: Amonenko, V. M.; Kruglykh, A. A.; Pavlov, V. S.; Mosova, L. N.

ORG: Physicotechnical Institute, Academy of Sciences UkrSSR (Fiziko-tekhnicheskiy institut Akademii nauk UkrSSR)

TITLE: Purification of cerium by electric transfer combined with zone melting

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 4, 1966, 578-581

TOPIC TAGS: cerium, metal zone refining, metal zone melting

ABSTRACT: To determine whether cerium can be purified by combining electric transfer with zone melting, molten cerium samples were refined by passing a current of 5.3 A/mm$^2$ in a vacuum for 50 — 150 hr. Iron, silicon, copper, and oxygen impurities were found to move to the cathode. The experiments were then repeated in helium; after 200 hr, the amount of impurities remaining in the cathodic and middle portions of the sample dropped below the sensitivity limit of spectral analysis. The samples were then subjected to zone melting, whose effectiveness was found to increase when an electric current (6 A/mm$^2$) was passed through the metal. The amount of impurities thus dropped from 0.245% in the

Card 1/2                              UDC: 546.655

L 32066-66

ACC NR: AP6013334

initial sample to 0.085% in the refined product. Following the refining process, the microhardness of cerium decreased from 28 to 23.8 kg/mm$^2$. Orig. art. has: 2 figures and 3 tables.

SUB CODE: 11 /SUBM DATE: 31Jul65 / ORIG REF: 003 / OTH REF: 002

Card 2/2

ACC NR: AP6036452                    SOURCE CODE: UR/0370/66/000/006/0169/0172

AUTHORS: Kruglykh, A. A. (Khar'kov);  Pavlov, V. S. (Khar'kov);  Smirnov, Yu. N. (Khar'kov)

ORG: none

TITLE: Oxidation of zone-refined cerium

SOURCE: AN SSSR. Izvestiya. Metally, no. 6, 1966, 169-172

TOPIC TAGS: cerium, cerium oxide, oxidation kinetics, oxidation

ABSTRACT: The oxidation kinetics of cerium was studied as a function of the purity of the metal.  The experiments were carried out in the temperature region of 150 - 300C.  The mass increase of specimens was determined after the method of V. Ye. Ivanov, A. A. Kruglykh, V. S. Pavlov, et al (Opredeleniye uprugostoy parov uranosoderzhashchikh soyedineniy. Sb. Termodinamika yadernykh materialov, Vena, 1962, 735).  In addition, the microstructure and x-ray structure of the surface of the oxidized specimens were determined.  The experimental results are presented in graphs and tables (see Fig. 1).  It was found that the oxidation of 99.3% pure cerium follows a linear oxidation law, that of zone-refined cerium (zone-refined up to 200C) follows a parabolic law.  The oxidation of high temperature zone-refined cerium (zone-refined above 200C) follows a linear law.  The complete combustion of compact 99.3% Ce occurs at 300C.  It is concluded that the removal of low-valence type metals from

Card 1/2                                                  UDC:  669.855.691

ACC NR: AP6036452
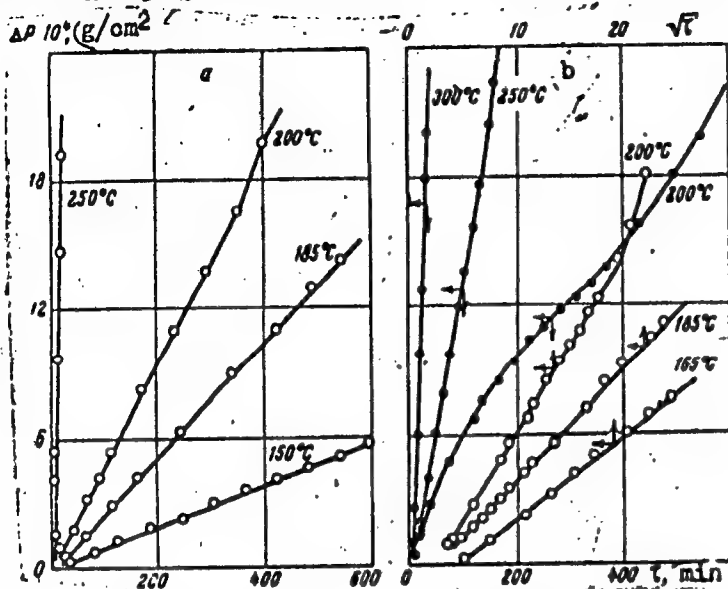


Fig. 1. Kinetic oxidation curves for the oxidation of 99.3% Ce. (a) - before and (b) - after zone-refining; $\triangle P$ - mass increase of specimen

cerium increases the stability of the metal towards corrosion. The authors thank G. N. Kartmazov for his help in the evaluation of the experimental results. Orig. art. has: 3 tables and 2 graphs.

SUB CODE: 11, 07     SUBM DATE: 16Apr65/     ORIG REF: 003/     OTH REF: 002
Cord 2/2

L 40023-66    EWT(m)/EWT(t)/ETI    IJP(c)    JD/JG

ACC NR: AP6019827  (N)                    SOURCE CODE:  UR/0370/66/000/001/0071/0072

AUTHOR: Kovtun, G. P. (Kharkov); Kruglykh, A. D. (Kharkov); D'yakov, I. G. (Kharkov)

ORG:  none

TITLE:  Zone refining of molybdenum

SOURCE:  AN SSSR. Izvestiya. Metally, no. 1, 1966, 71-72

TOPIC TAGS:  metal zone refining, molybdenum

ABSTRACT:  The effect of certain parameters of zone recrystallization (speed of travel of the liquid zone, number of passes) on the degree of refining of molybdenum was studied.  The metal purity was determined by measuring the ratio of the electrical resistance at room temperature to that at the temperature of liquid helium, $\rho = R_{295^\circ K}/R_{42^\circ K}$.  The zone refining was done with a special electron-beam gun whose design is described.  It was noted that the refining of molybdenum is due mainly to the vaporization of volatile impurities, and also to the mechanism of zone refining itself.  The character of the distribution of impurities over the length of the specimen indicates that molybdenum contains many impurities with a distribution coefficient $K < 1$, such as carbon.  A change in the speed of travel of the liquid zone from 1 to 5 mm/min does not appreciably affect the distribution of impurities along the specimen.  Orig. art. has: 2 figures and 1 table.

SUB CODE:  11/  SUBM DATE:  07Jan65/  ORIG REF:  001/  OTH REF:  002

Cord   1/1                              UDC:  669.284

DZHALILOV, D.R.; GORYAYEV, M.I.; KRUGLYKHINA, G.K.

Investigating the alkaloids from the plants of Berberis iliensis
of the Berberidaceae family. Report No.1. Izv. AN Kazakh. SSR.
Ser.tekh. i khim.nauk no.3:15-19 '64.                    (MIRA 17:2)

GORYAYEV, M.I.; KRUGLYKHINA, G.K.; PUGACHEV, M.G.; SHABANOV, I.M.

Study of essential oils from Artemisia santolinifolia Turcz.
(A.sacrerum var.minor Ledb.). Izv.AN Kazakh.SSR.Ser.khim.
no.9:33-42 '56. (MLRA 9:7)
(Essences and essential oils) (Wormwood)

GORYAYEV, M.I.; KRUGLYKHINA, G.K.; POLYAKOV, P.P.; SHABANOV, I.M.

Artemisia kurramensis Qasilb. as new source of santonin and thujone.
Trudy Inst. khim. nauk AN Kazakh. SSR 4:97-99 '59.

(MIRA 13:3)

(Santonin)   (Thujone)   (Kazakhstan--Wormwood)

GORYAYEV, M.I.; KRUGLYKHINA, O.K.; SATDAROVA, E.I.; KURINNAYA, N.V.;
SHABANOV, I.M.; POLYAKOV, P.P.

Materials on the study of alkaloid resources in the flora of
Kazakhstan and some regions of Central Asia. Trudy Inst. khim.
nauk AN Kazakh. SSR 4:112-122 '59.

(MIRA 13:3)

(Kazakhstan--Botany, Economic)
(Soviet Central Asia--Botany, Economic)
(Alkaloids)

RYBASOV, V.; KRUGLYY, A.; MORDVINOVA, R.

The hospital is protected.... Voen. znan. 41 no.3:28-29 Mr '65.
(MIRA 18:5)

SHIBER, Ruvim Abramovich; KRUGLYY, Georgiy Tikhonovich; BAZHOV, I.S.,
        inzh., retsenzent; SAMOKHVALOV, S.F., inzh., retsenzent;
        FEDOROV, V.A., inzh., retsenzent; KRUPNOV, S.A., inzh.,
        retsenzent; YESHCHIN, S.B., inzh., retsenzent;  SARANTSEV,
        Yu.S., inzh., red.; KHAIROVA, N.A., tekhn. red.

        [Arrangement, maintenance and repair of cars] Ustroistvo i
        remont vagonov.  Moskva, Transzheldorizdat, 1963.  395 p.
                                        (MIRA 17:2)

L-08204-67

ACC NR: AP6023008          (N)          SOURCE CODE: UR/0308/66/000/004/0034/0036

AUTHOR: Kruglyy, G. (Director); Dryakhlov, N. (Aspirant)

ORG: [Kruglyy] Odessa Ship Repair Yard No. 1 (Odesskiy sudoremontnyy zavod No. 1)
[Dryakhlov] KGU

TITLE: Specialization is the basis of technical progress in ship repairing enterprises

SOURCE: Morskoy flot, no. 4, 1966, 34-36

TOPIC TAGS: shipbuilding engineering, marine engineering

ABSTRACT: The development of specialization and the application of new efficient repair
methods are discussed with a view to the Five-Year Plan directives prescribing a 35-pct
reduction in time and a 15-pct decrease in cost of repairs of merchant marine vessels.
The present state of affairs with regard to specialization is criticized. It is recom-
mended that repairs of the same type vessels be conducted only at the shipyard specialized
in this type of construction. An example of the Tuapse Shipyard repairing tankers of the
"Kazbek" class is cited. The centralization of manufacturing standard spare parts at
specialized shipyards is also mentioned. Special attention is paid by the author to the
introduction and wide application of the so-called "zero stage" (nulevoy etap) repair
practice especially in connection with the so-called "aggregate method" (agregatnyy
method). It is stressed that by applying these methods, the repairs can be completed
simultaneously with unloading and loading operations without loss of time in navigation

Card   1/2                                        UDC:  629.128:331.872

L 08204-67

ACC NR: AP6023008

schedules. However, the repair shops and depots must be well equipped with spare parts and preassembled equipment units as well as with a skilled specialized personnel. The economical and technical advantages of these methods are generally discussed and some practical examples are cited. In general, the slowness in introducing and applying these methods is criticized and the reasons causing the slowness are investigated. It is mentioned that the repair shipyards are now administered by ship-operating agencies. Some inconsistencies of such an administration are discussed and some improvements are recommended. Various discrepancies between the past planned objectives and the existing reality are reviewed, criticized and a scientific approach to the solution of various problems is suggested. The review presented by the author was composed on the basis of the experience acquired in the Azov and Black Seas regions.

SUB CODE: 13/   SUBM DATE: None

Card   2/2   dda

SHIBER, R.A.; KRUGLYY, G.T.; BAZHOV, I.S., inzh., retsenzent;
    SAMOKHVALOV, S.F., inzh., retsenzent; FEDOROV, V.A., inzh.,
    retsenzent; KRUPNOV, S.A., inzh., retsenzent; YESHCHIN,
    S.B., inzh., retsenzent; SARANTSEV, Yu.S., inzh., red.;
    KHITROVA, N.A., tekhn. red.

    [Design, maintenance and repair of railroad cars] Ustroistvo
    i remont vagonov. Moskva, Transzheldorizdat, 1963.  395 p.
                                        (MIRA 16:6)
            (Railroads—Cars)

SOV/81-59-16-58538

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 415 (USSR)

AUTHORS:    Kruglyy, I.M., Makeyeva, Ye. D., Veysman, S.G., Mikhaylova, K.M.

TITLE:    Bentonite Lubricants as Substitutes for Lubricants of Solid Oil and Konstalin Type

PERIODICAL:    Tr. Vses. n.-i. in-t po pererabotke nefti i gaza i polucheniyu iskusstv. zhidk. topliva, 1958, Nr 7, pp 378-389

ABSTRACT:    The method and the technological system is described for the production of bentonite lubricants on the base of Askangel clay (Georgian SSR) which has been aminated by octadecylamine, and disteryldimethylammonium chloride and bromide; the industrial oil 20 served as oil base. The effect of the degree of dispersion of the clay in suspension, the quantity of amine used for precipitation and the pH of the medium on the effective viscosity of the lubricant were studied. In the samples which were prepared according to optimum prescriptions the effective viscosity was determined in the temperature range from $-20°C$ to $+50°C$ (speed gradient $D = 1,537$ sec$^{-1}$). The syneresis of all samples containing

Card 1/2

SOV/81-59-16-58538

Bentonite Lubricants as Substitutes for Lubricants of Solid Oil and Konstalin
Type

15% of aminated clay (6 - 9% of clay + 4 - 6% of amine) does not exceed 1.1%.
In spite of the low pH index (for some samples 4.3) the lubricants do not cause
corrosion of steel plates.  Lubricants with optimum viscosity are obtained from
a clay suspension in which the mean size of the particles $\leq$ 0.2 mm.  Changes in
the optimum ratios between amines and clay deteriorates the quality of the lubri-
cant.

S. Rozenfel'd.

Card 2/2

FRUGLYI, N. K., Cand Med Sci—(diss) "Therapeutic gymnastics as a method of restoration of the motor function in the system of complex treatment of patients with ... of the ... trauma of the spinal cord and ... radicles of the cord system." Saratov, 1957. 11 pp (Min of Health RSFSR. Saratov State Med Inst, 200 copies (KL, 22-58, 114)

KRUGLYY, M.M.

Exercise therapy for developing compensatory mechanisms in cases of late sequelae of spinal injuries. Vop.kur.fizioter. i lech. fiz. Kul't. 23 no.1:63-67 '58.                              (MIRA 11:3)

1. Iz kliniki neyrokhirurgii (zav. - zasluzhennyy deyatel' nauki prof. P.I.Emdin) Saratovskogo instituta vosstanovitel'noy khirurgii i ortopedii i kafedry fizicheskogo vospitaniya i vrachebnoy fizicheskoy kul'tury (zav. S.F.Kobzar') Saratovskogo meditsinskogo instituta.
        (SPINAL CORD--WOUNDS AND INJURIES)
        (EXERCISE THERAPY)

KRUGLYY, N.M.

Medical gymnastics in spastic paralysis as sequelae of spinal
cord trauma.   Ortop.,travm. i protez.  20  no.5:10-16  My '59.
(MIRA 12:9)

1. Iz otdeleniya neyrokhirurgii Saratovskogo nauchno issledovatel'-
skogo instituta travmatologii i ortopedii (dir. - dotsent Ya.N.
Rodin) i kafedry fizicheskogo vospitaniya i vrachebnoy fizkul'-
tury Saratovskogo meditsinskogo instituta (dir. - dotsent B.A.
Nikitin).
                    (SPINAL CORD, wds. & inj.
                        posttraum. spastic paralysis, exercise ther.
                        (Rus))
                    (PARALYSIS, etiol. & pathogen.
                        spinal cord inj. causing spastic paralysis,
                        exercise ther. (Rus))
                    (EXERCISE THERAPY, in various dis.
                        spastic paralysis due to spinal cord inj.
                        (Rus))

KRUGLYY, M.M., kand.med.nauk

Medical gymnastics in multiple fractures of the ribs. Voen.-med. zhur. no. 2:68-71 F '61.                                    (MIRA 14:2)
(RIBS--FRACTURE)  (EXERCISE THERAPY)

LEVIN, Roman Yefimovich; professor, doktor tekhnicheskikh nauk; KRUGLYY, S.M., redaktor; PATRIK, Ye.M., redaktor izdatel'stva; BERLOV, AP., tekhnicheskiy redaktor.

[New evaporators] Novyi vyparnoi apparat. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 199 p.

(MLRA 10:5)

(Evaporating appliances)

.7/-,/7/,  - /'-

USSR/Chemical Technology - Chemical Products and Their          H-6
               Application. Electrochemical Manufacturing. Electro-
               deposition. Chemical Sources of Electrical Current.

Abs Jour   :  Referat Zhur - Khimiya, No 1, 1958, 1924

Author     :  Faynshteyn S.Ya., Khain P.G., Simon A.G., Kruglyy S.M.
Inst       :  -
Title      :  Basic Trends in the Development of Industrial Chlorine
               Production Abroad.

Orig Pub   :  Khim. prom-st', 1957, No 4, 53-59

Abstract   :  No abstract.

Card 1/1

FAYNSHTEYN, S.Ya.; KHAIN, P.G.; SIMON, A.G.; KRUGLYY, S.M.

Basic trends in the development of chlorine production technology
abroad.  Khim.prom. no.4:245-251 Je '57.          (MLRA 10:9)
                              (Chlorine industry)

KRUGLYY, S. M.

AUTHORS:     Faynshteyn, S. Ya,,  Khain, P. G.,              64-1-19/19
             Kruglyy, S. M.,  Simon, A. C.

TITLE:       Main Trends in the Development of the Methods of Chlorine
             Production (Osnovnyye napravleniya razvitiya tekhniki
             proizvodstva khlora) see Khimicheskaya Promyshlennost'
             1957, Nr 4,  p. 245 (Sm. Khim.prom., No 4, 245, 1957)
             Reworking of Electrolytic Lyes  (Pererabotka
             elektroliticheskikh shchelokov)

PERIODICAL:  Khimicheskaya Promyshlennost', 1958, Nr 1, pp. 57-64 (USSR)

ABSTRACT:    Under the heading "From Abroad" this paper deals exclusively
             with foreign production- and working methods, and gives some
             statistical data as well as various commentaries on the
             advantages and disadvantages resp. of the individual methods.
             A schematic description with a detailed explanation of an
             evaporating plant of the firm "Buflovak" (Buffalo, USA) is
             given as well as a second scheme of a continuous evaporating
             plant for electrolytic lyes. Several details of the chlorine
             production plants of the firm "Diamond Alkali Co." are given
Card 1/2     as well as data on quality and production. Working methods

Main Trends in the Development of the Methods of Chlorine 64-1-19/19
Production. See Khimicheskaya Promyshlennost', 1957, Nr 4,
p. 245.
Reworking of Electrolytic Lyes

of the purification of caustic soda in the USA are given
with a schematic description of a refining plant with
liquid ammonia as well as the scheme of a device for the
production of anhydrous caustic soda which was also
developed in the USA. Details concerning the making firms,
operational balances and the capacity of the plants are
continuously given in the paper.
There are 4 figures, 1 table, and 36 references, 0 of which
are Slavic

AVAILABLE: Library of Congress

1. Chlorine-Production-Methods

Card 2/2

USCOMM-DC-54825

10(5)
AUTHOR:        Kruglyy, S. M.                                    SOV/64-59-4-15/27

TITLE:         Distribution of the Evaporated Steam in the Vessels of a
               Multi-vessel Vaporizer (Raspredeleniye vyparivayemoy vody po
               korpusam mnogokorpusnoy vyparnoy ustanovki)

PERIODICAL:    Khimicheskaya promyshlennost', 1959, Nr 4, pp 57-60   (USSR)

ABSTRACT:      A method for the predetermination of the distribution of the
               evaporated water in .   vessels (V) is described, which in
               contrast to the repeated calculations according to the so called
               method of "successive approximation" is sufficiently accurate.
               The smaller the ratio of the quantity of the evaporated water
               to the quantity of the liquid to be evaporated ($K_p$ = W/S) is,

               the greater is the influence exercised by the steam (which was
               produced by self-evaporation) upon the heat quantity which is
               transferred by the heating steam. The value $K_p$ characterizes

               the work of the evaporation device and influences the distribu-
               tion of the evaporated water in the (V), and the consumption of
               heating steam in the first (V). A distribution of the total
               quantity of water which evaporates in the individual (V) is
Card 1/2       given as a function $K_p$ = (W/S)·100 at certain conditions. The

Distribution of the Evaporated Steam in the            SG7/64-59-4-15/27
Vessels of a Multi-vessel Vaporizer

total quantity of the secondary steam obtained in any (V) of
the evaporation device is equal to the sum of the quantity of
the secondary steam produced by condensation of the heating
steam and the quantity of the secondary steam produced by
self-evaporation. When calculating the distribution of the
evaporated water in the (V),each of these components,
depending upon the working conditions of the device, must be
considered separately. The method given here solves this problem
by the aid of the coefficient of evaporation and the coefficient
of self-evaporation. The determination of the evaporation
coefficient $\alpha$ , and the self-evaporation coefficient $\beta$ is
described, and the calculation process is illustrated by means
of an example. A comparison of the results obtained according
to the method described and the method given in reference 1
(Table 2) shows good agreement. There are 1 figure, 2 tables,
and 12 references, 8 of which are Soviet.

Card 2/2

AGAFEYEV, N.I.; BALATOV, P.S.; ZVEREV, B.P.; IVANOV, I.A.; KRUGLYY, S.M.;
NIMYY, I.M.; FLEYSHMAN, V.O.; KHAIN, V.A.; SHUR, V.A.; EL'SKIY, V.N.

Condensation of a solution in vacuum evaporator installations.
Prom.energ. 15 no.4:15-16 Ap '60.          (MIRA 13:6)
                (Evaporating appliances)

ANTIKAYN, Petr Andreyevich; ARONOVICH, Mark Savvich; BAKLOSTOV,
    Arseniy Mikhaylovich. Prinimal uchastiye KRUGLYX, S.M.;
    NITSKEVICH, Ye.A., red.; LARIONOV, G.Ye., tekhn. red.

[Recuperative heat-exchange apparatus] Rekuperativnye teploobmen-
nye apparaty. Moskva, Gosenergoizdat, 1962.  231 p.
                                            (MIRA 15:7)
                (Heat exchangers)

DOVGARD, P.I.; KRUGMAN, K.I.; MALKES, F.S.; RODOVSKAYA, M.V.; ULANOVA, T.A.;
KAMERON, A.A., redaktor; KANDYKIN, A.Ye., tekhnicheskiy redaktor.

[Soviet railread literature published in 1954] Zheleznodoroshnaia
literatura SSSR, 1954. Moskva, Ges. transp.zhel-dor.izd-vo, 1956.
314 p.                                                     (MIRA 9:6)

1.Russia (1923- U.S.S.R.) Ministerstvo putey soobshcheniya. TSen-
tral'naya nauchno-tekhnicheskaya biblioteka. 2.Zamestitel' direktora
TSentral'noy nauchno-tekhnicheskoy biblioteki Ministerstva putey
soobshcheniya (for Kameron).
                    (Bibliography--Railreads)

KRUGMAN, K.I.; ZVEREV, N.B., nauchno-tekhn. red.; RODOVSKAYA, M.V., red.
GROMOV, Yu.V., tekhn. red.

[Continuous track; bibliography of Russian and foreign publications 1884-1960] Besstykovoi put'; bibliograficheskii ukazatel' otechestvennoi i inostrannoi literatury, 1884-1960. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1961. 85 p. (MIRA 15:2)

1. Russia (1923-  U.S.S.R.) Ministerstvo putey soobshcheniya. TSentral'naya nauchno-tekhnicheskaya biblioteka.
         (Bibliography--Railroads--Track)

POPENOV,D., red.; KRUGMAN,M., red.; SVET,Ye.B., red.; KOLPICHEV,V.I.,
tekhn.red.

[Efficient use of measuring equipment; experience of the
Chelyabinsk Plants] Ratsionalizatsiia v izmeritel'noi tekh-
nike; iz opyta raboty Cheliabinskikh zavodov. Cheliabinsk,
Cheliabinskoe knizhnoe izd-vo. No.3. 1959. 41 p.

(MIRA 14:5)

(Measuring instruments--Maintenance and repair)

BRITYVAN, V. A., KRUPNIKOVA, T. A.

Plants, Effect of Light On

Effect of KCN on gas metabolism of aqueous plants under different exposures to light.
Dokl. AN SSSR 85 No. 6, 1952.

9.  Monthly List of Russian Accessions, Library of Congress, December 1952 1953, Uncl.

Class Manufacture

At the plant "Krasnyi Mai.", Leg. prom. 12 No. 4, 1952

KRUGOV, G.Ye.

Heating tea glasses with generator gas and annealing electric
glass in conveyer furnaces. Leg.prom. 14 no.11:47-48 N '54.
(MLRA 7:12)

1. Direktor zavoda "Krasnyy May"
(Glass manufacture)

KRUGOV, I.A.

Improving hydrolysis production.  Gidroliz.i lesokhim.prom.
15  no.6:26-27  '62.                                    (MIRA 15:9)

1. Krasnodarskiy gidroliznyy zavod.
                        (Krasnodar—Hydrolysis)

VAZETDIN A, A.S.; KRUGOV, V.P.

Hydromechanical laying of multihollow blocks for conduits in building municipal telephone lines. Vest.sviazi 17 no.6:16 Je '57.
(MIRA 10:8)

1. Starshiye inzhenery Vsesoyuznogo nauchno-issledovatel'skogo instituta transportnogo stroitel'stva.
(Telephone lines)

ACC NR: AP7001450  ·(N)          SOURCE CODE: UR/0413/66/000/021/0186/0186

INVENTORS: Zolkin, A. V.; Nakhimovich, I. Ye.; Frolov, V. M.; Krugov, V. S

ORG: none

TITLE: A shock-absorbing device.  Class 47, No. 188225 /announced by Central Scien-
tific Research, Design, and Construction Institute of Mechanization and Power Engi-
neering of the Forest Industry (Tsentral'nyy nauchno-issledovatel'skiy i proyektno-
konstruktorskiy institut mekhanizatsii i energetiki lesnoy promyshlennosti)/

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 186

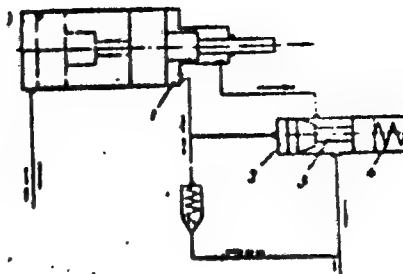TOPIC TAGS: shock absorber, hydraulic device, hydraulic equipment

ABSTRACT: This Author Certificate presents a shock absorbing device consisting of
a two-stage hydraulic cylinder with a shock absorbing chamber and an axial throttle.
The throttling chamber of the latter is connected with the second stage of the
hydraulic cylinder (see Fig. 1).  To change automatically the hydraulic resistance
in respect to the dynamic load on the shock absorber, the shock absorbing chamber
is connected to the fore-valve chamber of the throttle.  The throttle valve is spring-
loaded with a calibrated spring.

UDC:  621-752.2

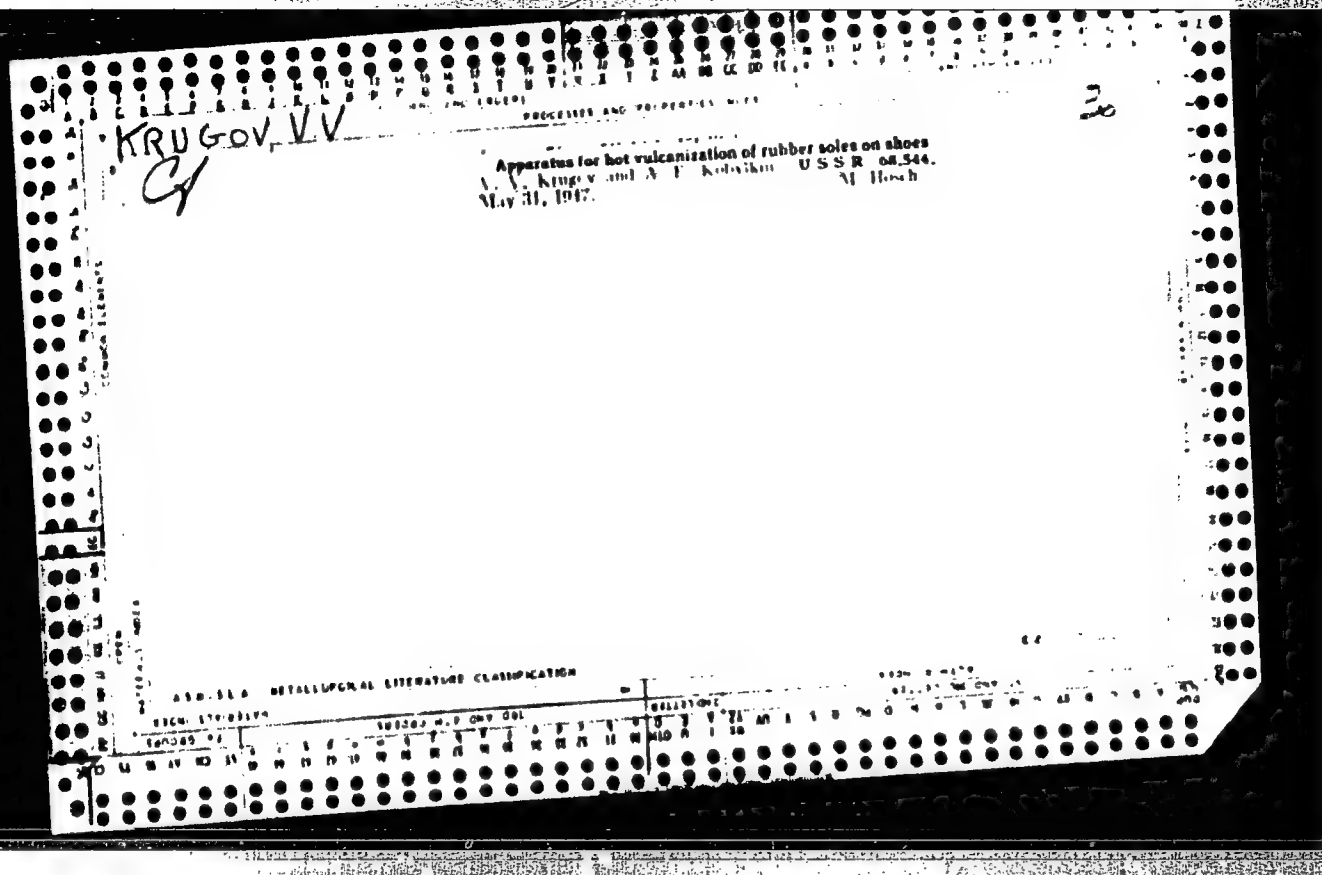Card  1/2

ACC NR: AP7001450

Fig. 1.  1 - shock absorbing chamber;
         2 - throttle chamber; 3 - throttle;
         4 - spring

Orig. art. has: 1 figure.

SUB CODE: 13/  SUBM DATE: 10Aug65

Card 2/2

KRUGOV, V.V.

Apparatus for hot vulcanization of rubber soles on shoes
V. V. Krugov and A. F. Kolotikhin    U S S R  oil 544.
May 31, 1947.

METALLURGICAL LITERATURE CLASSIFICATION

KRUGOV, V. V.

23383   Vyshe Tekhnicheskiy Uroven' Primeneniya Formovannykh Detaley [Obuvnaya
Prom-st'_]. Legkaya Prom-st', 1949, No. 6, c. 10-11.

SO:  LETOPIS NO. 31, 1949

KRUGOV, V. V.

Technology

Machines and apparatus for partial mechanization, of the production of footwear, Moskv, Gizleg-prom, 1951.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 1953, Uncl.

GALICH, Iliodor Illarionovich; GEDIKE, S.R., otv.red.; KRUGOVA, Ye.A.,
        red.; TSAL, R.K., tekhn.red.

        [Electric and radio navigation equipment] Elektro- i radio-
        navigatsionnye pribory. Leningrad, Gos.soiuznoe izd-vo sudo-
        stroit.promyshl., 1959.  198 p.                    (MIRA 13:2)
            (Aids to navigation)     (Nautical instruments)

S/858/62/000/001/004/013
D296/D307

AUTHORS:  Aksenova, G. V., Zrada, O. S., Krugovaya, G. N., Oleynik,
Ya. V., Starostyuk, A. K., Cherkashchenko, L. N. and
Chernogalova, A. G.

TITLE:  The influence of radiation upon the phosphorous content
and its metabolism in the brain

SOURCE:  L'vov. Universytet. Problemna lyaboratoriya radiobiolo-
hiyi. Biologicheskoye deystviye radiatsii, no. 1, 1962,
30-34

TEXT:  Frogs were exposed to total body irradiation of 200r (at
10r/min) from a distance of 16 cm. The brains were then investiga-
ted 2 hrs, and 2, 5, 7 and 11 days after exposure. 4 hours before
decapitation 0.5 ml of aq. $NaH_2P^{32}O_4$ of a dosage of 25 $\mu c$ per 100 g
weight, was administered by intraperitonal injection. The amount
of acid-soluble P and its metabolism, the phospholipids and the
protein P of the brain were then investigated. Two hours after ex-

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The influence of radiation ...          S/858/62/000/001/004/013
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posure, the total P-content in the acid-soluble fraction increased
by 12.8% as compared with the control animals. The inorganic P-
content increased by 11%, the total protein P by 21%, and the con-
tent of phospholipids decreased by 23.7%. These changes were even
more marked after 2 days, when the total acid-soluble P fraction
increased by 27.1%, out of which the inorganic P increased by 31%,
the total protein P by 27.8% and the phospholipid content decreased
by 42%. Six days after exposure, the total acid-soluble P fractions
had increased up to 46.2% and the inorganic P-content by 87%. At
the same time, however, the phospholipid content decreased by 23%
and the content of protein P by 18%. Seven days after exposure the
total acid-soluble P fraction increased by 50% but the total quan-
tity of inorganic phosphate increased by 11.1% compared with the
control animals. The phospholipid content was still decreased by
33% and the total protein P by 30%. 11 days after exposure, the
total acid-soluble P fraction was still increased by 45% out of
which the inorganic P exceeded the values found in the control ani-
mals by 36%, the content of the phospholipids was again increased by

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The influence of radiation ...          S/858/62/000/001/004/013
                                        D296/D307

37% and the content of the total protein P decreased by 39%. Thus
the acid-soluble P fraction remained increased throughout the expe-
riment, but the changes in protein P and phospholipids moved in
opposite directions. After an initial increase in the protein P
level a decrease could be observed, whilst the phospholipids
showed an increase. Two hours after exposure, the rate of metabo-
lism, as estimated by the relative specific activity of the frac-
tions, showed changes parallel to those in the P content. After 2
- 5 days, the decrease of the specific activity in all fractions
indicated a slowing down of the phosphate metabolism which reverted
to its normal level after 8 - 12 days. There are 2 tables.

ASSOCIATION:   Kafedra fiziologii cheloveka i zhivotnykh L'vovskogo
               universiteta (Department of Human and Animal Physio-
               logy, L'vov University)


Card 3/3

KRUGOVOY, N. S

M

PROCESSES AND PROPERTIES INDEX

14

*Electrolytic Detinning of Tinplate Scrap, and a Micro-Method for Determining Its Lead Content. A. M. Zanko and N. S. Krugovoi [*Ukr. Inst. physical chem., Akad. Wiss. Ukrain. S.S.R., 1936, 6, 247-253; C. Abs., 1937, 31, 6035]. [In Russian, with German summary.] The tin layer was first removed by anodic oxidation in sodium hydroxide solution. The stannate solution was then electrolysed to eliminate lead as PbO₂. The PbO₂ was then collected, and determined iodometrically or colorimetrically.  N. G.

METALLURGICAL LITERATURE CLASSIFICATION

KRUGOVOY, F.

Direct railroad-motorbus passenger traffic. Avt. transp. 43
no.12:18-19  D '65.                                    (MIRA 18:12)

1. Tuvinskoye avtoupravleniye.

AUTHOR:     Krugovoy, N. S.

TITLE:     The Electrolytic Method of Detinning Tin Plate and the Coulomb-meter Method of Determination of the Thickness of the Layer (Elektroliticheskiy metod snyatiya olova, beloy zhesti i kulonometricheskiy sposob opredeleniya tolshchiny sloya)

ABSTRACT:     The method consists of the anodic dissolution of the Sn layer in a 60 - 80-degree normal NaOH solution with a 0.5 - 1.5-amp current. The end of the process of solution is marked by a sharp decrease in current intensity upon the complete removal of the Sn layer and the beginning of the dissolving of the Fe base. The amount of dissolved Sn is determined either by weighing before and after the removal of the layer, or by measuring the amount of electricity consumed in the course of the electrolysis. A plan of a new electro-gas coulombmeter is offered, with the help of which the determination of the

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SOV/137-58-7-16071

The Electrolytic Method of Detinning Tin Plate (cont.)

amount of electricity is performed by measuring the volume of the $O_2$ and $H_2$ mixture evolved during the electrolysis from a 15% NaOH solution. The volume of the mixture is determined by the displacement of a liquid from a graduated burette. The experiments performed have corroborated the reproducibility of the method. The relative error constitutes ±5%.

1. Tin--Electrolysis    2. Electrolysis--Applications                  A. F.

Card 2/2

KRUGOVOY, Trifon Pavlovich;PUSHKIN, A.A., dots., otv. red.; KOVALEVA,
Z.G., red.; BELOKON', V.V., tekhn. red.

[Subject and method of economics; textbook for correspondence
school students] Predmet i metod politicheskoi ekonomii; uchebnoe
posobie dlia studentov zaochnogo fakul'teta.  Khar'kov, Izd-vo
Khar'kovskogo gos.univ. im. A.M.Gor'kogo, 1960. 40 p.
                                              (MIRA 15:1)
              (Economics)

KRUGOVOY, V.G.

The 1836-type wheel-turning lathe. Biul.tekh.-ekon.inform. no17:23-24
'58.
        (Lathes)    (Car wheels)                      (MIRA 11:9)

*Krugovykh. V. V.*

AUTHORS:     Zatsepin, G. T.,   Krugovykh, V. V.          56-2-4/51
             Murzina, Ye. A.,   Nikol'skiy, S. I.

TITLE:       The Study of High-Energy Nuclear-Active Particles by Means
             of an Ionization Chamber (Nablyudeniye yaderno-aktivnykh
             chastits vysokoy energii pri pomoshchi ionizatsionnykh kamer)

ABSTRACT:    In autumn 1955 the authors investigated at an altitude of
             3860 m above  sea level nuclear-active particles of high
             energy ($E > 10^{11}$ eV).  The apparatus used for these me-
             asurements consisted of 6 impulse-ionization chambers which
             were mounted below a lead layer of variable thickness. The
             ionization chambers consisted of brass cylinders. An
             electronic device made possible the registration of the
             intensity of the ionization impulse in each of the 6 chambers.
             Beside the ionization chambers there was a system of 972
             hodoscopic counters with a total surface of $\sim 10$ m$^2$.
Card 1/4     The distribution of frequencies of the ionization bursts as

The Study of High-Energy Nuclear-Active Particles by Means      56-2-4/51
of an Ionization Chamber

a function of their intensity (below different filters) it
shown in a diagram. The integral spectra of the bursts with
$N > 2000$ relativistic particles can be expressed by an
exponential law:

$$V\ (\geqslant N) = A/N^\delta$$

Here the exponent $\gamma$ is the same with all three spectra
(20, 50 and 80 cm thick lead layers); it is on the average
$\overline{\gamma} = 1,5 \pm 0,16$. The absolute frequencies of the ionization
bursts belon 20 cm and 50 cm of lead coincide within the
range of error, limits. The range for the absorption of the
nuclear active component in air is $\sim 120$ g.cm$^{-2}$. This value
is obtained in different ways. In the analysis of the
correlation of ionization bursts with atmospheric showers
the cases observed were divided into two groups:
1.- Ionization bursts which are accompanied by an atmospheric
shower of small density. 2.- Ionization bursts which are
accompanied by a broad atmospheric shower of more than $10^3$
particles. The result of this analysis is shown in a

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The Study of High-Energy Nuclear-Active Particles by Means       56-2-4/51
of an Ionization Chamber

diagram as follows: With increasing intensity of the
ionization burst also the probability of air escort
increases (vozduzhnoye soprozhdeniye). In 25 % of the
cases the authors observed bursts which can be explained by
a simultaneous entrance into the detector of at least
two nuclear active particles of high energy. The authors
investigated the showers with a number of particles from
$7.10^4$ to $7.10^5$. The distribution of the frequency of the
ionization bursts produced by the nuclear-active particles
of the wide atmospheric shower with respect to their density
is shown in a diagram. The frequency of bursts decreases
with increasing thickness of the lead layer. The
distribution with respect to the density of the showers
accompanying wide atmospheric showers can be represented
by the exponential function with the exponent $\gamma = 0,9 \pm 0,2$.
The spectrum of the nuclear active component in a wide
atmospheric shower of $\sim 10^5$ particles can be represented
in the interval of energies of from $5.10^{41}$ to $10^{13}$ eV in the
form $E^{-0,9 \pm 0,2}$. But the real spectrum can be different from

Card 3/4                the one given here because of the simultaneous entrance of

The Study of High-Energy Nuclear-Active Particles by Means of an     56-2-4/51
Ionization Chamber

        several nuclear-active particles on the surface of the
        detector.
        There are 3 figures, 1 table, and 1 reference, 1 of which are
        Slavic.

ASSOCIATION:  **Institute of Physics** imeni P. N. Lebedev AS USSR

           (Fizicheskiy institut im. P. N. Lebedeva Akademii nauk
           SSR)

SUBMITTED:    July 20, 1957

AVAILABLE:    Library of Congress

        1.  Ionization chambers-Performance  2.  Ionization chambers-
           Characteristics  3.  Particles-Study and teaching

Card 4/4

L 40083-66
ACC NR

NR, AT6020568

(l)/EWT(m)/EWP(w)     (N)     IJP(c)     EM/WH/GD

AUTHOR: Gorbatenko, M. F.; Kruilko, V. I.

ORG: none

SOURCE CODE: UR/0000/65/000/000/0083/0088

TITLE: Kinetic theory of surface waves in a plasma waveguide

SOURCE: AN UkrSSR. Vysokochastotnyye svoystva plazmy (High frequency properties of plasma). Kiev, Naukovo dumka, 1965, 83-88

TOPIC TAGS: kinetic theory, plasma waveguide, Maxwell distribution, plasma electron temperature

ABSTRACT: The damping coefficient of the surface wave on a plane unbounded surface is proportional to thermal velocity for small thermal velocities of plasma electrons. This effect is investigated in the case of a plasma waveguide formed by a layer of plasma of finite thickness. The starting point is the Vlasov and Maxwell equations for the high frequency part of the distribution function (with the equilibrium part given by a Maxwellian distribution). The form of the solution is a product of the space function with the time and space harmonic parts. A general solution for the distribution function is obtained and used to derive integro-differential equations for the electric field components. This is solved approximately for the case of small thermal veloci- ties. It is shown that in this problem, the damping coefficient of the wave is also

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L 40089-66

ACC NR: AT6020568

proportional to the electron thermal velocity. However, as the plasma layer thickness decreases the phase velocity of the wave decreases. Orig. art. has: 12 formulas.

SUB CODE: 20/     SUBM DATE: 19Nov65/     ORIG REF: 002

Card 2/2

KRUIS, B.

Comparative study of the leveling horizons of Czechoslovakia and the adjacent states.

p. 28 (Geodeticky a Kartograficky Sbornik.)   1957.   Praha, Czechoslovakia.

SO:   Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 1 Jan 1958

S/035/62/000/008/052/090
A001/A101

AUTHOR:    Kruis, B.

TITLE:    Symposium on measuring deformations of constructions by geodetic
methods

PERIODICAL:  Referativnyy zhurnal, Astronomiya i Geodeziya, no. 8, 1962, 5,
abstract 8037 ("Geod. a·kartogr. obzor", 1962, v. 8, no. 1, 20,
Czech)

TEXT:      A report on "Importance and problems of geodetic measurements of
construction deformations" and communications on applications of geodetic methods
to studying deformations of various constructions were heard. and discussed in a
symposium organized by the Academy of Sciences, CzechSSR, on November 23 - 24,
1961.  The resolution is presented.

Yu. Kh.

[Abstracter's note:  Complete translation]

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